

REMARKS

Reconsideration of this application as amended is respectfully requested.

In the Office Action dated April 4, 2006, claims 1-23 were pending. Claims 1-5 and 12-23 were rejected. Claims 6-11 were withdrawn from consideration. In this response, claims 1-3, 12-15, 18 and 21-22 have been amended. Claims 4-11, 19-20 and 23 have been canceled without prejudice. New claims 24-33 have been added. Therefore, claims 1-3, 12-15, 18, 21-22 and 24-33 are pending. Support for the amendments can be found throughout the specification as filed. No new matter has been added.

Amendments

Rejections under 35 U.S.C. § 112

Claims 1-5

Claims 1-5 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter because of insufficient antecedent basis for the limitation “the subsystem”. Claims 4-5 have been canceled without prejudice. Independent claim 1 has been amended to provide an antecedent basis for “the subsystem”. As such, Applicant respectfully submits that claims 1-3 are now definite. Withdrawal of the 35 U.S.C. § 112 second paragraph rejection for claims 1-5, as amended, is respectfully requested.

Rejections under 35 U.S.C. § 103(a)

Claims 1-5, 12-15 and 18-23

Claims 1-5, 12-15 and 18-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,640,573 to Gephardt et al. (hereinafter “Gephardt”) in view of U.S. Patent No. 5,819,100 to Pearce (hereinafter “Pearce”). Claims 4-5, 19-20 and 23 have been canceled without prejudice. However, Applicant respectfully submits that Applicant’s invention as claimed in claims 1-3, 12-15, 18 and 21-22, as amended, is patentable over the cited references.

Specifically, for example, independent claims 1, 12, 15, 18 and 21, as amended, include limitations similar to:

“receiving from the subsystem a first message;
sending a second message addressed to the subsystem based on information
including the first message,”
(emphasis added)

Applicant’s amended claims 1, 12, 15, 18 and 21 contain the limitations of sending a message addressed to a subsystem based on information received from the subsystem. It is respectfully submitted that neither Gephardt nor Pearce, individually or in combination, disclose or suggest the noted limitations.

Rather, Gephardt, teaches a power management message unit integrated within a processor to provide an encoded message to enable an external power management unit to monitor the internal events of the processor (Gephardt, col. 2, lines 11-37). The message is issued through a power management message bus (Gephardt, col. 4, lines 64-65). The power management unit latches each message transmitted upon the assertion of a validation strobe (Gephardt, col. 6, lines 11-15). Gephardt also discloses when the power management unit receives a new message, it controls clock control signals and power control signals in accordance with a power management algorithm (Gephardt, col. 6, lines 15-18). Apparently, in Gephardt, a message is transmitted one way from the power management message unit to the power management unit through a power message bus. Indeed, Gephardt does not need to address a subsystem to send a power management message because the power message bus is dedicated between the power management message unit and the power management unit (Gephardt, Fig. 1). Nowhere does Gephardt disclose or suggest sending a message addressed to a subsystem based on information received from the subsystem.

Pearce, on the other hand, discloses a method of operating a power-managed computer system that monitors the life cycle of a hard disk drive and extends the life span of the hard disk drive by reducing the rate at which hard disk drive spin-up cycles are initiated (Pearce, col. 2, lines 9-15). An interrupt signal activates a system management mode (SMM) of operating and executes handler routine that spins up and down the hard disk drive by performing a SCSI start/stop instruction (Pearce, col. 7, lines 34-63). The SMM routine preserves the life span of a hard disk drive by accumulating a count of the number of times the drive has been activated

(Pearce, col. 8, lines 47-49). A timer value and hard disk power down flag are set for purposes of conserving energy, conserving the life span of the hard drive, and/or preventing loss of data according to the accumulated count (Pearce, col. 8, lines 4-46). However, Pearce is completely silent about sending a message addressed to a subsystem based on information received from the subsystem.

Furthermore, Gephardt's technique provides an external power management unit encoded information regarding the internal events of an integrated processor while minimizing the number of external pins on the integrated processor (Gephardt, col. 2, lines 32-36). An external power management unit reduces the power consumptions of computer system depending on the events detected (Gephardt, col. 1, lines 40-46). Gephardt states power reduction is important in maximizing the operating life battery-powered portable computer system. Pearce, however, extends the life span of a hard disk drive by reducing the rate at which hard spin-up cycles are initiated (Pearce, col. 2, lines 12-15). Pearce specifically teaches not to deactivate a hard drive to preserve the life span of the hard drive (Pearce, 39-41). Clearly, Pearce teaches not to reduce the power for preserving the life span of the hard drive. Therefore, Pearce and Gephardt teach away from each other.

As such, not only do Gephardt and Pearce not disclose, individually or even in combination, the above noted limitations, but the references, considered as a whole, do not suggest the desirability and thus the obviousness of making the combination.

In order to render a claim obvious, each and every limitation of the claim must be taught by the cited references. Therefore, in view of the foregoing remarks, it is respectfully submitted that independent claims 1, 12, 15, 18 and 21, as amended, and dependent claims 2, 3, 13 and 22 are patentable over Gephardt in view of Pearce.

Claim 16

Claim 16 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Gephardt in view of Pearce and further in view of U.S. Patent No. 6,105,142 to Goff et al. (hereinafter "Goff"). Applicant hereby reserves the right to swear behind Goff at a later date. However, Applicant respectfully submits that Applicant's invention as claimed in claim 16, as amended, is patentable over the cited references.

Specifically, for example, claim 16 depends from independent claim 15, as amended. It is respectfully submitted that Goff fails to disclose or suggest the limitations set forth above.

Rather, Goff teaches a method for managing power consumption in a computer system that is compliant with the proposed Advanced Configuration and Power Interface (ACPI) specification (Goff, col. 3, lines 34-39). Goff also discloses a power management processor monitors all commands and data directed to registers from ACPI driver, ACPI BIOS, or ACPI tables. The power management processor determines the appropriate power states for platform hardware based on the commands and data. The power management processor directly interfaces with various controls, controllers, sensors and status indicators (Goff, col. 8, line 64 – col. 9, line 10), including a power button status (Goff, col. 9, lines 47- 50). However, Goff is completely silent about sending a message addressed to a subsystem based on information received from the subsystem.

Office action asserts that “it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Gephardt-Pearce and Goff because they both teach system for controlling power in a computer system”. Applicant respectfully disagrees. Instead, for the similar reasons as discussed above, Pearce and Gephardt teaches away from each other. Furthermore, Goff teaches a power management processor sandwiched between the platform hardware and the ACPI registers. Gephardt, however, teaches power management for an integrated processor. Thus, Goff and Gephardt also teach away from each other.

As such, not only do Gephardt, Pearce and Goff not disclose, individually or even in combination, the above noted limitations, but the references, considered as a whole, do not suggest the desirability and thus the obviousness of making the combination.

In order to render a claim obvious, each and every limitation of the claim must be taught by the cited references. Therefore, in view of the foregoing remarks, it is respectfully submitted that independent claims 15, as amended, and dependent claim 16 are patentable over Gephardt in view of Pearce and further in view of Goff.

Claims 17

Claims 17 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Gephardt in view of Pearce and further in view of U.S. Patent No. 5,978,922 to Arai et al. (hereinafter “Arai”). However, Applicant respectfully submits that Applicant’s invention as claimed in claim 17, as amended, is patentable over the cited references.

Specifically, for example, claim 17 depends from independent claim 15, as amended. It is respectfully submitted that Arai fails to disclose or suggest the limitations set forth above.

Rather, Arai teaches a computer system comprising a ROM and a power-supply controller. The ROM stores the BIOS software. The power-supply controller monitors the amount of power remaining in the power supply (Arai, col. 5, lines 15-35). The BIOS calculates the amount of power remaining in the power supply from the rate at which the system is consuming power as detected by the power supply controller (Arai, col. 11, lines 2-6). Based on the amount of power calculated, the BIOS executes either a hibernation-type resume operation or a normal-type resume operation (Arai, col. 11, lines 7-21). However, Arai is completely silent about sending a message addressed to a subsystem based on information received from the subsystem.

Furthermore, Arai relates to a computer having resume function of hibernation type (Arai, col. 1, lines 7-8). Arai states specifically a hibernation-type resume operation consumes far more power than normal-type resume operation (Arai, col. 2, lines 35-36). In contrast, Gephardt is relevant to the art where power reduction has been particularly important in maximizing the operating life of battery-powered portable computer system (Gephardt, col. 1, lines 15-17). Thus, Arai and Gephardt teach away from each other.

As such, not only do Gephardt, Pearce and Arai not disclose, individually or even in combination, the above noted limitations, but the references, considered as a whole, do not suggest the desirability and thus the obviousness of making the combination.

In order to render a claim obvious, each and every limitation of the claim must be taught by the cited references. Therefore, in view of the foregoing remarks, it is respectfully submitted

that independent claims 15, as amended, and dependent claim 17 are patentable over Gephardt in view of Pearce and further in view of Arai.

CONCLUSION

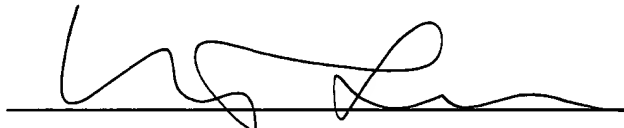
Having tendered the above remarks and amended the claims as indicated herein, Applicants respectfully submit that all rejections have been addressed and that the claims are now in a condition for allowance, which is earnestly solicited.

The required fee for a two-month extension is enclosed. If there are any additional fees due in connection with this communication, please charge our deposit account no. 02-2666. If a telephone interview would in any way expedite the prosecution of the present application, the Examiner is invited to contact Vincent Lue at (408) 720-8300.

Respectfully submitted,

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